ABSTRACT

Energy Storage Requirements for Hybrid Systems

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The results of a preliminary analysis of energy storage requirements for Hybrid Electric Vehicles (HEV's) are presented. The objectives and key assumptions are noted, including the use of a scaled Federal Urban Driving Schedule/Highway Fuel Economy Test (FUDS/HWFET) driving profile and the use of either a fast-response (e.g., conventional internal-combustion engine) or slow-response (e.g., gas turbine) power source. Vehicle criteria were used to size the prime power source, and thence size the energy storage system. Two requirements sets -- a minimum level and a desired level -- were obtained and will be discussed. The modeling approach that is being used to further refine these requirements will also be presented.